

August 19, 1971

Mr. C. M. Rutter
Equitable Gas Company
111 South Commons
Pittsburgh, Pennsylvania 15212

Dear Mr. Rutter:

In reply to your letter of August 5, 1971, our corrosion regulations do not require coating or cathodic protection when repairing cast iron pipe. (See Paragraphs 192.483(e) and 192.489(b)). Since protection of the pipe is not required in this situation, then protection of mechanical clamps used in repair would not be required either.

However, if you should determine that a structure, such as a mechanical clamp, is anodic to the rest of the bare structure (a small anode connected to a large cathode relationship), good corrosion engineering practices would dictate electrical isolation or the application of local cathodic protection to both structures electrically interconnected.

I trust this information will be helpful to you.

Sincerely,

Lance F. Heverly
Assistant Chief
Technical Division
Office of Pipeline Safety

August 5, 1971

Mr. Lance F. Heverly
Assistant Chief
Technical Division
Office of Pipeline Safety
Department of Transportation
Washington, D. C. 20590

Dear Mr. Heverly:

The "Requirements for Corrosion Control" states that the use of a "loose polyethylene wrap" is not considered to be a proper manner of coating newly installed cast iron or ductile iron pipe, as related to such a loose coating becoming a breeding ground for bacteria and/or restricting cathodic protection current flow to metal (directly) under breaks in the wrap. Therefore, the coating of newly installed cast iron or ductile iron pipe requires that the coating be bonded to the pipe as is required for steel pipe and with such coating satisfying the requirements of Section 192.461.

As you know, this polyethylene wrap has also been promoted for use as a "coating" for malleable iron clamps connected to existing bare cast iron pipe joints. Since the same possible bacteria breeding grounds and/or cathodic protection current restrictions could result as related to the use of the wrap for this purpose, does this mean that the clamps must be properly coated and cathodically protected - or should the clamps remain bare and without cathodic protection. I have attached to this letter a copy of literature produced by Dresser which indicates the possible reasonable reasoning that new clamps should not be coated when installed onto existing bare cast iron pipe, as related to possible galvanic corrosion due to the dissimilar metals involved.

If your office requires the clamps to be coated, then I assume that the coated clamps must also be cathodically protected. Since the clamps are not being installed because of external corrosion faults and since the "Requirements" state that, "Repaired cast iron and ductile iron are excepted from the cathodic protection requirement because the density of cathodic protection current, as normally provided by galvanic anodes, is not sufficient to reach the cast iron beneath the graphitized surface so as to prevent further graphitization. Current of such low density from such low electromotive force collects on the graphitized area and continues through adjacent cast iron and back to the galvanic anode source without providing protection." Therefore, if no active corrosion is occurring to the cast iron pipe then cathodic protection is not required for the pipe. If cathodic protection is required for the clamps, either coated or uncoated, it will not be possible to apply such protection only to the clamps by using galvanic anodes. If forced drainage cathodic protection is required to be applied to non corroding cast iron pipe purposely to provide cathodic

protection to the newly installed clamps the current densities required would be unnecessarily excessive.

Considering the low electromotive forces involved in a dissimilar metal cell of cast iron pipe, malleable iron clamp and the alloy of the Dresserloy bolts, it is possible that the Dresser determinations are correct wherein the clamps do not require coating and/or cathodic protection. Please advise.

Very truly yours,

C. M. Rutter

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Pittsburgh, Pa. 15212